

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1-13 cancelled.

14. (Previously presented) The cleaning system according to Claim 23, wherein $a_1=0.2771$, $a_1=-0.0042$, $a_2=-0.0094$, $a_3=-0.0061$, $a_4=-0.2738$ and $a_5=-0.0377$; and $x_1=\sigma$ -moment M_2 , $x_2=\sigma$ -moment M_1 , $x_3=\sigma$ -moment M_4 , $x_4=f_{\text{lim}}$, and $x_5=\Delta Q_{\text{limit}}$; and $n=5$.

15. (Cancelled)

16. (Previously presented) The cleaning system according to Claim 23, wherein at least 75% of said fragrance ingredients have a relative fabric affinity value (y) of at least 4.

17. (Previously presented) The cleaning system according to Claim 16, wherein at least 85% of said fragrance ingredients have a relative fabric affinity value (y) of at least 4.

18. (Currently amended) The cleaning system according to Claim 23, wherein at least 50% of said fragrance ingredients have a relative fabric affinity value (y) of at least 6 selected from the group consisting of: Terpineol Alpha, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene, 2,6-dimethyl-2-heptanol, 2-ethyl-4-(2,3,3-trimethyl-3-cyclopenten-1-yl)-2-butene-1-ol, Mandarin, profarnacol, methylanthrenilate, hexahydroindolein, benzylcinnamate, benzylsalicylate, Jannol, hydroxycitronellol, and (2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecen-1-ol.

19. (Previously presented) The cleaning system according to Claim 18, wherein at least 60%

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of said fragrance ingredients have a relative fabric affinity value (y) of at least 6.

20. (Previously presented) The cleaning system according to Claim 19, wherein at least 70% of said fragrance ingredients have a relative fabric affinity value (y) of at least 6.

21. (Previously presented) The cleaning system according to Claim 23, wherein said fragrance system comprises additional additives selected from the group consisting of anti-microbial ingredients, UV filters, anti-static ingredients, optical brighteners, cooling agents, and warming agents.

Claim 22. (Cancelled)

23. (Currently amended) A cleaning system comprising,

- a) liquid CO_2 and
- b) a fragrance system, wherein said fragrance system comprises fragrance ingredients that are determined to be substantive to garments according to the following mathematical equation:

$$y = a_0 + \sum_{i=1}^n a_i x_i$$

wherein y is defined as the predicted relative substantivity of an aroma chemical having a range of from about 1-7 with 7 being the most substantive;

wherein x_{1-n} are defined as molecular descriptors derived out of COSMO RS calculations;

wherein n is defined as number of descriptors used in the said equation;

wherein a_{0-n} are defined as coefficients derived from linear regression analysis;

wherein at least 60% of said fragrance ingredients have a relative fabric affinity value (y)

of at least 4 wherein the fragrance ingredients are selected from the group consisting of:

benzaldehyde, methylbenzoate, 4,7-methano-3a,4,5,6,7,7a-hexahydro-5 (or 6)-indenyl-acetate, phenylacetaldehyde 100%, terpinolene, eucalyptol, benzylacetate, cis- and trans-3,7,-dimethyl-2,6-octadienal, tricyclodecanyl isobutyrate, 3-(4-ethylphenyl)-2,2-dimethylpropanal, isobornylacetate, ethylene dodecanedioate, di-menthylacetate, 2-tert-butylcyclohexylacetate, aldehyde C10, methyl dihydrojasmonate, cyclohexylmethylcarbinolcrotonate, trans-2 decenal, 2-methyl-3-(4-isopropylphenyl)propanal, ethyl hexylacetate, iso-alpha methyl ionone, 9-hexadecen-10-olide, 5-phenyl-3-methyl-2-pentenitrile, 2-methyl-3-(4-tert-butylphenyl)propanal, aldehyde aldehyde C14, maltol, vanillin, aldehyde aldehyde C12, methyl nonyl acetaldehyde, linalool perfumery grade fine fragrance, ethylvanillin, eugenol, 3a,6,6,9a-tetramethyldodecahydronaphtho[2,1-b]furan, cedryl methyl ether, Terpineol Alpha, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene carboxaldehyde, 2,6-dimethyl-2-heptanol, 2-ethyl-4-(2,3,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol, Mandarin, profarnesol, methylanthrenolate, hexahydroindole, benzylcinnamate, benzylsalicylate, Jasmol, hydroxycitronellol, and (2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecen-1-ol.

24. (New) A cleaning system comprising:

- a) liquid CO₂, and
- b) a fragrance system, wherein said fragrance system comprises fragrance ingredients that are determined to be substantive to garments according to the following mathematical equation:

$$y = a_0 + \sum a_n c_n$$

wherein y is defined as the predicted relative substantivity of an aroma chemical having a range of from about 1-7 with 7 being the most substantive;

wherein $x_{1,n}$ are defined as molecular descriptors derived out of COSMO-RS calculations;
wherein n is defined as number of descriptors used in the said equation,
wherein $a_{1,n}$ are defined as coefficients derived from linear regression analysis;
wherein said fragrance ingredients have a relative fabric affinity value (y) of at least 4
selected from the group consisting of:

benzaldehyde, methylbenzoate, 4,7-methano-3a,4,5,6,7,7a-hexahydro-5 (or 6)-indenyl-
acetate, terpinolene, eucalyptol, benzylacetate, cis- and trans-3,7,-dimethyl-2,6-octadienal,
tricyclododecyl isobutyrate, isobornylacetate, ethylene dodecanedioate, di-menthylacetate, 2-tert-
butylcyclohexylacetate, cyclohexylmethylcarbinolcrotonate, trans-2 decenal, 2-methyl-3-(4-
isopropylphenyl)propanal, iso-alpha methyl ionone, 9-hexadecen-16-olide, 5-phenyl-3-methyl-2-
pentenenitrile, aldehyde C14, maltol, 3a,6,6,9a-tetramethyldodecahydronaphtho[2,1-b]furan,
cedryl methyl ether, terpineol alpha, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene
carboxaldehyde, 2,6-dimethyl-2-heptanol, 2-ethyl-4-(2,3,3-trimethyl-3-cyclopenten-1-yl)-2-
buten-1-ol, Mandaril, profinanesol, methylanthranilate, hexahydroiraldol, benzylcinnamate,
Jaemol, hydroxycitronellol, and (2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecen-1-ol.

25. (New) The cleaning system according to Claim 23, wherein wherein at least 60% of said
fragrance ingredients comprise fabric ingredients having a relative fabric affinity value (y) of at
least 4

26. (New) The cleaning system according to Claim 24, wherein wherein at least 60% of said
fragrance ingredients comprise fabric ingredients having a relative fabric affinity value (y) of at
least 4

27. (New) A process for cleaning soiled garments or fabric materials comprising the steps of.

A) placing a soiled garment or fabric material into a sealable and pressurizable device;

B) introducing into the device a cleaning agent comprising CO₂, which comprises a fragrance system which comprises fragrance ingredients having a relative fabric affinity value (y) of at least 4, wherein y is calculated according to the following mathematical equation:

$$y = a_0 + \sum a_n x_n$$

wherein y is defined as the predicted relative substantivity of an aroma chemical having a range of from about 1-7 with 7 being the most substantive;

wherein x_{1-n} are defined as molecular descriptors derived out of COSMO-RS calculations;

wherein n is defined as number of descriptors used in the said equation;

wherein a_{0-n} are defined as coefficients derived from linear regression analysis; and

C) contacting said soiled garment or fabric material with said cleaning agent to remove undesired stains or soils and to deposit a substantive long lasting fragrance system on said garment or fabric materials, wherein the fragrance ingredients having a relative fabric affinity value (y) of at least 4 are selected from the group consisting of: benzaldehyde, methylbenzoate, 4,7-methano-3a,4,5,6,7,7a-hexahydro-5 (or 6)-indenyl-acetate, linalolene, eucalyptol, benzylacetate, cis- and trans-3,7,-dimethyl-2,6-octadienal, tricyclodeceny) isobutyrate, isobornylacetate, ethylene dodecanedioate, di-menthylacetate, 2-tert-butylcyclohexylacetate, cyclohexylmethylcarbinolcrotonate, trans-2 decenal, 2-methyl-3-(4-isopropylphenyl)propanal, iso-alpha methyl ionone, 9-hexadecen-16-olide, 5-phenyl-3-methyl-2-pentenitrile, aldehyde C14, maltol, 3a,6,6,9a-tetramethyldodecahydronaphtho[2,1-b]furan,

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cedryl methyl ether, terpineol alpha, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene, 2,6-dimethyl-2-heptanol, distilled L-Menthol, 2-ethyl-4-(2,3,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol, Mandaril, profamesol, methylanthrenilate, hexahydroiraldein, benzylcinnamate, benzylsalicylate, Jasmol, hydroxycitronellol, and (2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecen-1-ol.

28. (New) The process according to Claim 27, wherein said CO₂ is liquid CO₂.
29. (New) The process according to Claim 27, wherein said CO₂ is supercritical CO₂.
30. (New) The process according to Claim 27, wherein at least 60% of said fragrance ingredients have a relative fabric affinity value (y) of at least 4.
31. (New) The process according to Claim 27, wherein at least 75% of said fragrance ingredients have a relative fabric affinity value (y) of at least 4.
32. (New) The process according to Claim 27, wherein at least 85% of said fragrance ingredients have a relative fabric affinity value (y) of at least 4.
33. (New) The process according to Claim 27, wherein at least 50% of said fragrance ingredients have a relative fabric affinity value (y) of at least 6, as calculated by the method herein defined, wherein the fragrance ingredients having a relative fabric affinity value (y) of at least 6 are selected from the group consisting of: terpineol alpha, 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene carboxaldehyde, 2,6-dimethyl-2-heptanol, distilled L-Menthol, 2-ethyl-4-(2,3,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol, Mandaril, profamesol, methylanthrenilate, hexahydroiraldein, benzylcinnamate, benzylsalicylate, Jasmol, hydroxycitronellol, and (2E,7R,11R)-3,7,11,15-tetramethyl-2-hexadecen-1-ol.

34. (New) The process according to Claim 33, wherein at least 60% of said fragrance ingredients have a relative fabric affinity value (γ) of at least 6.
35. (New) The process according to Claim 33, wherein at least 70% of said fragrance ingredients have a relative fabric affinity value (γ) of at least 6.
36. (New) The process according to Claim 27, wherein said fragrance system comprises additional additives selected from the group consisting of anti-microbial ingredients, UV filters, anti-static ingredients, optical brighteners, cooling agents, and warming agents.